

Abnormal Cervical Appearance: What to Do, When to Worry?

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On completion of this article, the reader should be able to: (1) identify several cervical abnormalities commonly encountered on pelvic examination, (2) triage patients appropriately to observation and reassurance or referral to a gynecologist or gynecologic oncologist on the basis of cervical appearance and further evaluation as indicated, and (3) apply simple clinical tips to optimize pelvic examination and visualization of the “elusive” cervix.

Many clinicians encounter cervical lesions that may or may not be associated with cytologic abnormalities. Such abnormalities as ectropion, Nabothian cysts, and small cervical polyps are quite benign and need not generate concern for patient or clinician, whereas others, including those associated with a history of exposure to diethylstilbestrol, cervical inflammation, abnormal cervical cytology, and postcoital bleeding, should prompt additional evaluation. Further, in some patients, the cervix may be difficult to visualize. Several useful clinical suggestions for the optimal examination of the cervix are presented.

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CCA = clear cell adenocarcinoma; CIN = cervical intraepithelial neoplasia; DES = diethylstilbestrol

THE “ELUSIVE” CERVIX

The ability to visualize the cervix is necessary to identify cervical abnormalities. In many patients, visualization is straightforward; however, patients who are nulliparous or postmenopausal, those with a retroverted uterus that results in an anterior cervical displacement, or those with prior vaginal surgery, a full bladder, constipation, uterine enlargement, a pelvic mass, substantial pelvic scarring, or a high body mass index present challenges to the adequate examination of the cervix.

If this is the patient’s first examination, outlining the examination in advance alleviates the patient’s anxiety. Explaining the next step may also improve the patient’s comfort during the examination. A chaperone should be available if requested. The Table provides useful suggestions to clinicians for optimizing the cervical examination.

POTENTIAL CERVICAL ABNORMALITIES

NABOTHIAN CYSTS

Nabothian cysts (also called *mucinous retention cysts* or *epithelial cysts*) are common and benign and are considered a normal feature of the adult cervix (Figure 1, C). Many women have multiple cysts. They may be translucent or opaque, whitish to yellow, and range from a few millimeters to 3 to 4 cm in diameter. The transformation zone of the cervix (where columnar and squamous cells meet) is in a continuous pro-

cess of repair, and squamous metaplasia and inflammation may block a gland orifice. The endocervical columnar cells continue to secrete but are covered by squamous epithelium, forming a mucinous retention cyst. Rarely, a woman with several large Nabothian cysts may develop gross enlargement of the cervix. Nabothian cysts may also occur after childbirth or minor trauma. They are generally asymptomatic and require no treatment.⁴ Infrequently, a woman may experience fullness or pain from a substantially enlarged Nabothian cyst and may be treated by electrocautery ablation or excision.

Therefore, we recommend that women with Nabothian cysts measuring greater than 1 cm be referred to a gynecologist.

LEIOMYOMA

Cervical myomas (3%-9% of all leiomyomas) are solitary firm masses of smooth muscle arising from the lower uterine segment. Most are small and asymptomatic. On occasion, they protrude through the cervical os and become ulcerated and infected. The expanding myoma may cause symptoms related to mechanical pressure, including dysuria, urgency, urethral or ureteral obstruction, dyspareunia, and obstruction of the cervix. Menorrhagia and dysmenorrhea may also occur. Cervical myomas are generally diagnosed on pelvic examination but may need additional imaging such as ultrasonography to delineate size and location and to monitor growth. Myomas that have prolapsed through the cervix are difficult to differentiate from cervical polyps and are typically removed. *They may be observed for rate of growth if asymptomatic or referred to a gynecologist if enlarging, sizeable, or symptomatic.*

CERVICAL ECTROPION

Cervical ectropion occurs when eversion of the endocervix exposes columnar epithelium to the vaginal milieu

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TABLE. **Suggestions for Performing an Optimal Cervical Examination****Have the patient empty her bladder before the examination**

A full bladder can push the uterus and cervix higher in the pelvis and make examination more difficult and uncomfortable

Retract the labia laterally

Thick labia majora can prevent the tip of the speculum from reaching the cervix

In women with pendulous labia minora, retraction laterally prevents the speculum from pulling on the labia

Insert a warmed speculum up to the hub

Most women have vaginas as long as a standard speculum. Exceptions include women with congenital anomalies, prior vaginal surgery, pelvic radiation, or adhesions

Advancement past the introitus does not increase discomfort

Provide the patient with suggestions for relaxing introital muscles

The patient may try keeping her lower back on the examination table and dropping her knees apart as much as comfortable

She should avoid rocking her pelvis toward the ceiling or holding her breath

She may distract herself by wiggling her toes or concentrating on slow breathing

Improve vaginal wall retraction

Insert the speculum so that the hub is at the introitus, then open the speculum fully

Use a wider speculum in multiparous women

Find the cervix

Once the speculum is past the introitus, aim downward toward the sacrum because most cervices are located posteriorly in the vaginal apex

Steer toward cervical mucus or areas without rugae in premenopausal women while guiding the speculum anteriorly

Once part of the cervix is visualized, adjust to view the entire cervix

Perform a bimanual examination to localize the cervix if the initial attempt is unsuccessful, using water as a lubricant to avoid interference with subsequent Papanicolaou testing

Postmenopausal cervices may be flush with the vagina and only identifiable as a small opening at the apex of the vagina

(also called *cervical ectopy* or *erosion*) (Figure 1, A). The everted epithelium has a reddish appearance, similar to granulation tissue. Ectropion is common in adolescents, pregnant women, or those taking estrogen-containing contraceptives. Vaginal discharge is the most common symptom. Postcoital bleeding may also occur, especially in pregnant women.⁵ Treatment is rarely required except for excessive mucus discharge or bothersome spotting. *Malignancy should be excluded by cervical cytology. An ablative procedure using cryotherapy or electrocautery performed by a gynecologist is effective for symptomatic ectropion.*

CERVICAL POLYPS (ENDOCERVICAL POLYPS)

Cervical polyps may present with postcoital, intermenstrual, or postmenopausal bleeding but are more often incidentally found at pelvic examination (Figure 1, B). The ability to manipulate the lesion away from the cervical canal in 4 directions with a small swab differentiates a polyp from a polypoid irregularity of the cervix. The etiology of cervical polyps is unclear. Most are benign; the incidence of malignancy is 1:1000.⁶ Malignancy is more common in perimenopausal or postmenopausal women.⁶ Minute

asymptomatic polyps less than 5 mm in diameter do not necessitate removal but may be monitored. *Larger polyps should be evaluated and removed by a gynecologist. Removal is typically a straightforward office procedure.*

**CERVICAL ABNORMALITIES
REQUIRING FURTHER ATTENTION****ENDOMETRIOSIS AND ADENOMYOSIS**

Cervical endometriosis may present as red, blue, or black cervical lesions ("powder burns") (Figure 2, B) that do not blanch on compression. The patient may be asymptomatic or report symptoms of discharge, dysmenorrhea, pelvic pain, or deep dyspareunia. Symptoms beyond discharge would suggest additional implants in the pelvis. Adenomyosis is endometrial tissue present within the myometrium or uterine muscle. It may involve the endocervical canal or form a polypoid mass protruding into the endocervical canal.¹² Biopsy of cervical lesions shows typical histology of endometriosis. Biopsy will help differentiate other lesions of concern, such as endocervical glandular dysplasia and adenocarcinoma.¹³ *Patients with suspected cervical endometriosis or adenomyosis should be referred to a gynecologist for additional evaluation.*

CERVICITIS

Cervicitis, which most commonly presents as vaginal discharge or postcoital bleeding, can be acute or chronic, with an infectious or noninfectious etiology (Figure 2, E). Mucopurulent discharge, cervical friability, and cervical edema are characteristic of gonococcal and chlamydial cervicitis.¹⁴ Unfortunately, chlamydial cervicitis is often asymptomatic and screening of all sexually active women younger than 25 years and older women with risk factors is recommended by the Centers for Disease Control and Prevention.¹⁵ Trichomoniasis is suggested by punctate hemorrhages over the vagina and cervix, the so-called strawberry cervix. Herpes simplex viral infection presents as multiple small vesicular or ulcerative lesions. *Testing and treatment for likely organisms or referral to a gynecologist is appropriate for suspected infectious cervicitis.*

POSTCOITAL BLEEDING

Postcoital bleeding, which can arise from the cervix or other genital area, may be of benign or malignant etiology. The cervical epithelium associated with cervical intraepithelial neoplasia (CIN) and invasive cancer (most commonly of the squamous type) is thin and friable, readily detaching from the cervix (Figure 2, A). In women with postcoital bleeding, CIN is found in 7% to 10% and cervical, vaginal, or endometrial cancer in less than 1%.^{16,17} Some women with postcoital bleeding may have pathological lesions

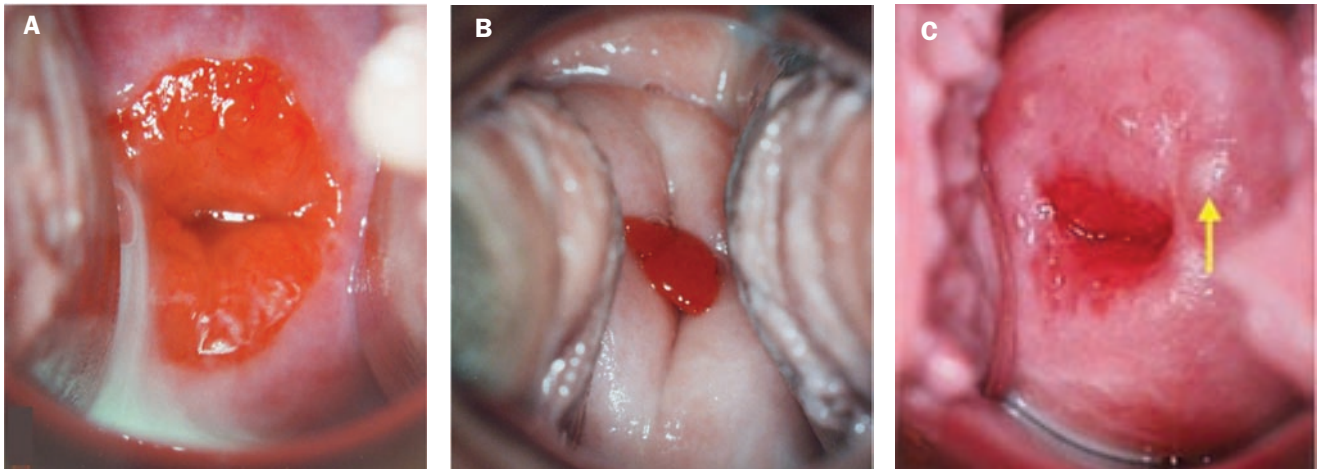


FIGURE 1. Cervical abnormalities: A, Ectropion; B, Endocervical polyp; C, Nabothian cyst. From references 1-3.

identifiable by colposcopy and biopsy and missed by cervical cytology alone. *Women with unexplained postcoital bleeding should be referred to a gynecologist for a colposcopic examination.*¹⁸

DIETHYLSTILBESTROL EXPOSURE-RELATED ABNORMALITIES

In the United States, diethylstilbestrol (DES) was prescribed to prevent miscarriage and preterm labor between 1938 and 1971. Although shown to lack efficacy for these indications in 1953, it was still widely prescribed until the early 1970s, when women exposed to DES in utero were shown to develop clear cell adenocarcinoma (CCA) of the vagina and cervix at a significantly higher rate than the general population. After 1971, DES continued to be prescribed to pregnant women outside the United States¹⁹ and is still available in oral form for human use in some countries, making this a consideration for our international patients. In 2010, the youngest women exposed in the United States to DES are in their forties and the oldest in their early seventies. Most have no reproductive tract abnormalities, although others have an increased risk of anomalies.

CLEAR CELL ADENOCARCINOMA

Most CCA has been reported in women younger than 35 years; however, it is essential to identify DES daughters and continue screening them through midlife and beyond. Clear cell adenocarcinoma may present as an abnormal lesion of the vagina or cervix or be identified through cytology. The relative risk of CCA in a DES daughter is 40.7 as compared with that of a nonexposed woman.²⁰ About 1 to 1.5 in 1000 DES daughters will develop CCA with a peak incident in their late teens to early twenties; however,

it has been reported in women in their thirties and forties.^{21,22} Because most non-DES-related CCA occurs after menopause and most DES daughters are currently entering menopause, it is unclear whether an increase in CCA in this age group of DES daughters will be seen. An association between DES exposure and CIN is unclear; however, one study reported a 2-fold increase in CIN incidence that may be related to increased surveillance.²³

VAGINAL ADENOSIS, COCKSCOMB CERVIX, AND CERVICAL COLLAR OR HOOD

About one-third of DES daughters have vaginal adenosis (Figure 2, D) and abnormalities of the cervix, including the cockscomb cervix (Figure 2, C) and the cervical collar or hood. Up to two-thirds of DES daughters experiencing infertility have a uterine anomaly, most commonly a T-shaped uterus.

EVALUATION AND MANAGEMENT OF DES-EXPOSED WOMEN

In appropriately aged women, clinicians should elicit an accurate history of cervical and vaginal abnormalities, including a history of recurrent miscarriage or preterm labor in the patient's mother. DES daughters should receive the following testing *annually* because routine screening intervals do not apply: physical examination including breast examination and mammography; pelvic examination with inspection and palpation of the vulva, vagina, and cervix; vaginal and cervical cytology; and bimanual examination including rectal examination.

All grossly abnormal cervical and vaginal lesions on examination should be biopsied or referred to a gynecologist for evaluation and management. Cervical cytology may be

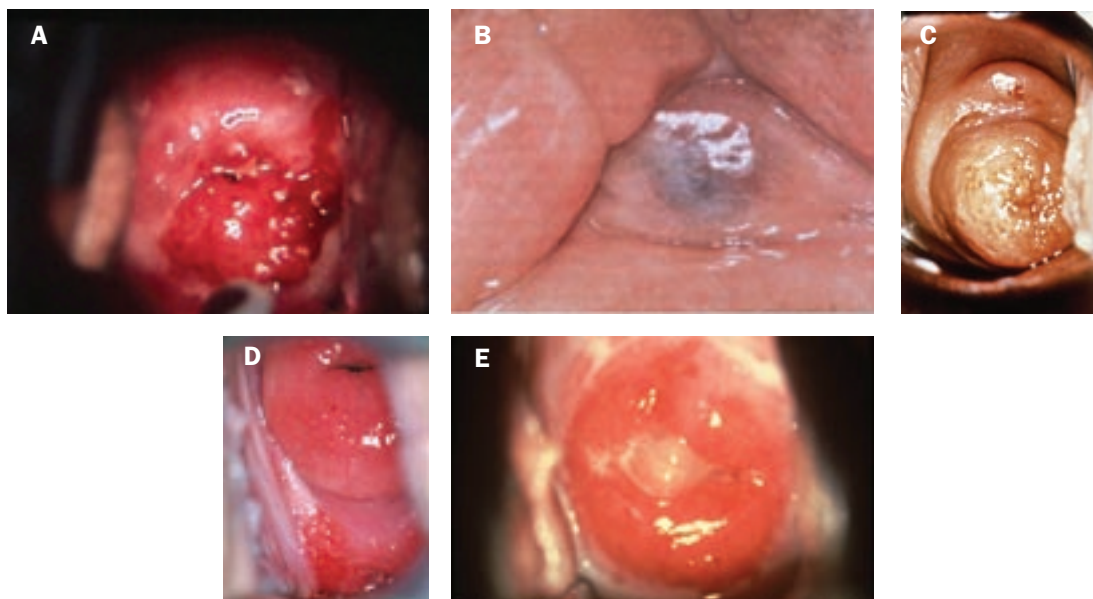


FIGURE 2. Cervical lesions requiring further attention: A, Cervical cancer; B, Cervical endometriosis; C, Cockscomb cervix (related to diethylstilbestrol [DES] exposure in utero); D, Vaginal adenosis (related to DES exposure in utero); and E, Cervicitis. From references 7-11.

performed to guide the specialist to colposcopy or clinical follow-up but does not rule out cancer in the presence of a lesion. *Women diagnosed as having CCA on cytology and/or biopsy need immediate referral to a gynecologic oncologist.*

CONCLUSION

The optimal examination of the cervix is aided by appropriate patient positioning, speculum size, and labial retraction. Search for the cervix should begin in the posterior vagina. Most Nabothian cysts, endocervical polyps, and cases of cervical ectropion may be managed conservatively. Cervicitis may also be managed in the primary care setting, provided that infections are treated. Gynecology referral is triggered by cervical lesions associated with abnormal cervical cytology, unexplained postcoital bleeding, DES exposure, and suspected cervical endometriosis or adenomyosis.

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CME Questions About Abnormal Cervical Appearance

- In which one of the following cases is it unnecessary to remove a cervical polyp?
 - When it is associated with vaginal bleeding
 - When is larger than about 5 mm
 - When it is asymptomatic
 - When it is an endometrial polyp
 - When it is associated with an abnormal cervical cytology
- Which one of the following situations warrants referral to a gynecologist?
 - A 4-mm cervical polyp
 - Asymptomatic ectropion
 - Nabothian cyst smaller than 1 cm
 - Small cervical leiomyoma
 - Postcoital bleeding
- In which one of the following scenarios are “elusive” cervixes often present?
 - In multiparous women who are sexually active
 - In women with a low body mass index
 - In women with retroverted uteri that result in anterior cervical displacement
 - After hysterectomy
 - After bladder emptying
- With which one of the following cervical abnormalities is prenatal diethylstilbestrol (DES) exposure not associated?
 - Cervical hood
 - Cervical laceration
 - Cockscomb cervix
 - Clear cell carcinoma of the cervix
 - Cervical collar
- With which one of the following cervical conditions is a cervix of normal appearance most often associated?
 - Herpes simplex virus
 - Trichomoniasis
 - Squamous cell carcinoma of the cervix
 - Chlamydial cervicitis
 - Cervical endometriosis

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